DOCUMENT RESUME

ED 471 007 CS 511 512

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TITLE	Review of Literature: Oral Language. Historical Research Summary #1.
PUB DATE	1998-04-00
NOTE	43p.; For related documents, see CS 511 512-517.
PUB TYPE	Information Analyses (070)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	*Child Language; Early Childhood Education; *Educational Research; *Language Research; Literature Reviews; *Oral Language; Research and Development; Theory Practice Relationship

ABSTRACT

Although children's oral language has been a focus of interest and inquiry through the 20th century, current investigations document research with literature of more recent decades to support investigations, theoretical design, or philosophical approach. The developmental nature of the literature, with marked changes in theory and methods of child language research, illustrates efforts to describe children's language in more precise and definitive ways. The format of this historical review of oral language is designed to: (1) identify the investigator; (2) describe the focus of the study; and (3) include verbatim comments of the researcher for the impact of a personal statement as a direct account of professional perspective. The review offers a summary of the earlier research from which current practice and further inquiry emerge. It concludes that the thrust of the interest by educational researchers and practitioners in the language development of the elementary school child during the decades of major instructional change, and the emerging knowledge of the language of both the preschool and school child, contributed to an efficient relationship between language instruction and language behavior. The primacy of oral language can be considered in its relationship to written language and will be included in subsequent literature reviews. Contains 112 references of research published between 1903 and 1969. (NKA)

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Review of Literature: Oral Language. Historical Research Summary #1

April 1998

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REVIEW OF LITERATURE
ORAL LANGUAGE

About the Review

The format of this historical review of oral language research is designed to:

(a) identify the investigator

(b) describe the focus of the study

(c) include "In their own words ..." verbatim comments of the researcher for the impact of a personal statement as a direct account of professional perspective.

The selection of the studies is intended to demonstrate cumulative, yet changing inquiry which while increasing what was learned about the nature of language precluded comparison investigations. Several studies followed in sequence on a continuum of specific inquiry, others emerged as tangible hypotheses.

Although children's oral language has been a focus of interest and inquiry through the 20th century, current investigations document research with literature of more recent decades to support investigations, theoretical design, or philosophical approach.

The developmental nature of the literature with marked changes in theory and methods of child language research, illustrates the increased efforts to describe children's language in more precise and definitive ways.

The review offers a summary of this earlier research from which current practice and further inquiry emerge.

From another perspective, it is acknowledged that a child enters school for beginning instruction with an extensive speaking vocabulary (Gleason, 1969), the ability to communicate orally in acquired, adult language patterns (Templin, 1957; Loban, 1963; Entwistle, 1966; Menyuk, 1969), and both the desire and the need to use language in communication (Watts, 1944; Bruner, 1964; Wilt, 1965).

Further impetus in child language research resulted as it was found that a child who entered school with spoken language was unequipped to express language in written form (Commission on English, 1965). The instructional, sequential writing program was subsequently designed to provide skills which enabled written language to reflect, to some degree the level of oral competency (Parke, 1960; Squire, 1965).

Characteristics of Oral Language

An increased interest in language development began in 1925 with the realization of the valuable insight which can be gained into the intelligence and other psychological traits through the study of linguistic expression. For approximately 35 years the studies were directed toward quantitative and normative aspects of child language. Later trends were directly related to the contribution of linguistics with its conception of language as a system that can be described internally in terms of two levels: the phonological (sound system) and the grammatical. In addition to the analysis of the internal system of sound and syntax, some consideration is given in this review to the systematic treatment of the semantic and functional aspects of language acquisition and development: the former represents the field of linguistics as described; the latter represents the field of psycholinguistics, concentrating on individual psychology. The cultural aspect of language is the contribution of anthropological study. A more recent field of research, sociolinguistics, unites sociology and linguistics in the study of verbal behavior from the viewpoint of the interaction of language and the participant.

How Language is Defined

Several selected definitions of language reflecting the emphases of particular disciplines follow.

To **Fries** (1952) language is a *"system of recurring sequences or patterns of sames of vocal sounds, which correlate with recurring sames of stimulus-situation features, and which elicit recurring sames of response features. A linguistic community consisting of those individuals who make the same regular and predictable responses to the same patterns of vocal sounds."* (79)

Carroll (1953) describes language as *"a structured system of arbitrary vocal sounds and sequences of sounds which is used in interpersonal communication and which rather exhaustively catalogs the things, events, and processes of human experience."* (10)

Langer (1951) defines language as *"a form of symbolization of experience and occurs inevitably because the need to transform experience into symbols is a biologically determined characteristic of man."*

Whorf (1956) concluded that *"We dissect nature along lines laid down by our native language."* (213)

To **MacGinitie** (1969), *"Language is a double system--a system of content or meanings and a system of expression or signs."* (686)

How Language Is Acquired

Language development has been comprehensively reviewed by **McCarthy** (1954), **Carroll** (1960), **Ervin** and **Miller** (1963), and **MacGinitie** (1969) and from this literature investigations are selected for summary.

McCarthy (1954) tabulated the results of the eight major infant studies by assembling 126 items of language development, ranging from vocalization on the part of the child (#1: vocal grunt) to responses which were indicative of the comprehension of the spoken language (#126: understands three prepositions). **Bayley** (1933) and

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Shirley (1933) undertook longitudinal studies, while **Buhler** (1930), **Buhler** and **Hetzer** (1935), **Gesell, Thompson,** and **Amatruda** (1938), **Gesell** and **Thompson** (1934), **Gesell** (1925) and **Cattell** (1940) used a cross-sectional method of study. **McCarthy** (1954) also described the studies of infants (**Irwin** 1946, 1947, 1948) which yielded information about the sequence and frequency of vowel sounds and consonant sounds and linked speech production with the *"organistic"* (374) approach to language development (**Goldstein**, 1948). Biographical language studies of individual children were undertaken by linguists **Gregoire** (1937), **Leopold** (1949), **Cohen** (1952) and **Velten** (1943) in which the *"idiolect"* (**Carroll,** 1960) of a particular child was described following the method of investigation of a linguistic scientist studying a new language or dialect. The *International Phonetic Alphabet* with the phonetic approach was used with the case study method. **Lynip** (1951) introduced the sound spectrograph for graphic recording and used the spectrogram in his analysis. **Weir** (1962) demonstrated the gradual and increasing mastery of language structures through self-correction in the recorded utterances of her own child.

Jakobson (1956) described the developmental sequence of the sound system in terms of successive contrasts between features beginning with the consonant vowel distinction, rather than phonemes which suggests an economical process of learning. From a study of articulation differences between two large groups of first-grade children with and without kindergarten **Pendergast** (1966) concluded that *"if a terminal age where the sound may be defined as that age when 90 percent of the children correctly articulated, no sounds have a terminal age as late as eight years."* (546)

Lenneberg (1966) responds to his own question, *"Why do children regularly begin to speak between their 18th and 28th month of life*? (219) by detailing four

reasons for considering language development as an innately determined program of behavior:

First, linguistic universals such as phonetic systems and syntax are common to all languages. Second, historical studies of languages reveal that although spoken languages change, at no time can evidence of aphonemic or ungrammatical human speech be found. Third, specific language disability such as delayed speech onset, poor articulation, or marked reading disability in which general intelligence remains unaffected appears to be inherited. Fourth, the developmental schedule of language acquisition follows a fixed sequence so that even if the schedule is retarded the order of attainment of linguistic skills remains unchanged. **Lenneberg** also cites the fact that most language tests assess the quality of existing language development but not whether the children are actually not capable of taking advantage of existing stimulation. In addition, he assumes that in most instances initially poor language environment does not cripple the child's basic potentiality permanently as documented by the studies of children in orphanages who benefitted from the greater stimulus availability. This is further supported by studies of atypical deaf children which indicated that the amount of hearing loss was the most significant factor in language development (**Bown, Jr.**, and **Mecham**, 1961; **Wilson**, 1963). **Lenneberg** contends that since a child cannot acquire language unless he is exposed to it, he focused attention on two areas of concern: *"Complementary to the question of how old the child must be before he can use the environment for language acquisition is that of how young he must be before it is too late to acquire speech and language for it is evidenced that the primary acquisition of language is dependen: upon a certain developmental stage which is quickly outgrown at puberty."* (235) Since the age limitation *"seems to be*

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related to a loss of adaptability and inability for reorganization within the brain," (247) **Lenneberg** concludes that the child's capacity to learn language is therefore, a consequence of maturation. **Bateman** (1917) gathered together all the information available in regard to the first word in order to show something of its time of appearance and of its character and found that the ages of the children at the time of using the first word, vary from eight to fifteen months, with the largest group at ten months. The subjective nature of the Bateman study in the determination of a *"word,"* (394) questions the practical value of this study in other than a comparison of the findings with **Lenneberg's** chronological references to the age of the onset of speaking.

Acquisition of Syntax

Brown (1966) and **Brown** and **Bellugi** (1964) have described three processes in the acquisition of syntax. The first process of imitation and reduction explains the child's limitation of what the parent says but with systematic reduction in the length of the utterance. **Piaget** (1962) reported that the two- to seven-year-old child often imitates without being aware of it but he contends that the child's incentive for imitation beyond the sensory-motor level is his *"estimate of the person he imitates."* (73) (This appears to emphasize the role of the teacher in the primary-grade classroom). **Menyuk** (1969) referred to children's imitations of the behavior of persons in their environment, primarily the mother, and noted that one of these behaviors is verbal. A second process is imitation and expansion in which the mother imitates the child's utterance but expands and corrects it. The lack of *"expansion"* by lower-class parents has been suggested as a factor in the slow rate of linguistic development (**McNeill**, 1966). **Cazden** (1965), however, did not find expansion training significantly successful in language training.

The third process involves the induction of the underlying structure of the language in which certain errors reflect the child's attempt to induce regularities from the speech of the adults (i.e., the child's use of plurals *"foots"* or tense *"digged"*) (100) are examples of this process.

Brown and **Berko** (1957) explored children's use of rules through a *"word game"* technique in which pictures and nonsense syllables were used and found that four- to seven-year-old children knew the rules for forming the plural and possessive for nouns and the past tense and third person singular for verbs. Other studies of pluralization rules (**Anisfeld** and **Tucker**, 1967; **Anisfeld** and **Gordon**, 1968, **Bryant** and **Anisfeld**, 1968) revealed the syntactic competency of children in grades kindergarten through four. It has also been found that standard competence in the semantic system was achieved before it was achieved in the grammatical system (**Carlson** and **Anisfeld**, 1969). An example of this is the two-year old child's description of an airplane which was *"loud"* as a *"louding plane."* (513)

In observing children's application of rules **Jersild** (1968) distinguished between *"psychological"* and *"grammatical"* criteria. For example, when a child says *"goed"* for *"went,"* he is using the ed ending as in *"waited,"* to express the past tense. From a grammatical point of view, he may be in error, but from a psychological point of view, Jersild suggests, this appears to be a *"good"* error.

Ervin (1964) notes in her study of imitation and structural change in young children's language that a child can compare his own speech to that of others if he is able to make discriminations and remember models. Language development from this point of view involves three processes: (1) continual expansion in the comprehension of adult speech, (2) imitation of particular instances by children without a systematic

sequence of samples, and (3) building by analogy of classes and rules observed in the child's consistent production of sentences he could not have heard. **Ervin** concludes that *"the influence of listening to adults lies at the base of the generalizations and analogies formed by the child."* (188)

This has been supported in studies which suggest that the child's learning of language involves innate mechanism operating on information about the structure of language which the child gets listening to the speech of adults (**Chomsky**, 1965; **Fodor**, 1966; **Fodor** and **Katz**, 1964; **Greenberg**, 1963; **McNeil**, 1963).

Chomsky (1965) makes a distinction between competence which he describes as the speaker's knowledge of his language and his performance. The problem for the linguist, Chomsky states, as well as for the child learning the language, is to determine from the performance the system of rules that has been mastered by the speaker as observed in actual performance.

In a study of active-passive transformations (**Beilin** and **Spontak**, 1969) of the language of nursery, kindergarten, first- and second-grade children, it was found that there is a relatively late development of the passive and even a later development of understanding of active-passive equivalence. In a series of steps which start with the use of the active sentence itself, it was found that the child constructs the rules of the active-passive transformation out of his linguistic experience. An example is given of the coordination of two active statements into a single sentence that conveys the logical meaning of the action, e.g., (a) "Susan is running and Mark is pushing her down." The coordination by conjunction is an attempt to make Mark the logical subject and Susan the logical object which is the sense conveyed by the coordinate sentence. It is further explained that the attempt is even more successful logically when the causal connector

because is employed as in (b) "Susan is falling because Mark pushed Susan." The investigator suggests that the most sophisticated response is, (c) "Susan is pushed by Mark." (5) These examples are included here to suggest the effect of the study of linguistics on quantitative measures of language. From this point of view, sentence length alone is questionable as an indication of language maturity since sentence (a) consists of nine words, (b) of seven words, (c) of five words. The number of words in any language sample therefore should also be affected by *"the more sophisticated"* response.

The phenomenon of language acquisition whether described as *"getting outside the child to inside"* (**Church**, 1961), or as initiating from *"innate linguistic ability"* (**Lenneberg**, 1964), can be linked to a unique idea advanced as early as 1886 by the American ethnologist, Horatio Hale who concluded from his observation that the origin of linguistic stocks is to be found in the language-making instinct of very young children (**Jesperson**, 1964). In time, this has been termed the child's *"sentence-making machine"* (**Dalgliesh**, 1966) and *"language learning mechanism"* (479) (**Whipp**, 1969). Supporting this view, **Paul Goodman** (1968) has suggested that *"if we try to teach children to speak according to our own theories and methods and schedules, as we try to teach reading, there would be as many stammerers as there are bad readers."* (73)

The linguists persist in speculating and experimenting in seeking evidence about the structure of language through an understanding of the way in which it is acquired. The difficulties of the task are, in fact, the bases of concern in current linguistic studies (**Ervin-Tripp**, 1967).

Perhaps as **Chukovsky** (1963) concluded from his study of the language of Russian children from two to five years of age *"in truth, the young child is the hardest mental toiler on our planet."*

Criteria for Evaluation

Length of Response. Quantitative measures of speech determine only quantity and rate of speech output without reference to the quality or complexity of the expression. The length of response however, is considered an objective type of measurement. **Bell**, as early as 1903, reported that a child at four years used 14, 996 words in a day. **Nice** (1917) reported that a child of 63 months used 10,500 words in a day. The **Brandenburgs** (1919) reported that a child of 52 months of age used 14,930 words in a day. The significant implications of these data is that they were reported on children who were encouraged to converse freely at home and, therefore, show the importance of conversation in the environment of a young child. Although the average total number of words used in a specific length of time showed a regular increase with the age of a child, substantial individual differences and variability in determining rate of speech production pointed to the inadequacies of the relationships as a criterion. In one study of the amount and rate of talking of young children (**Olsen** and **Koezle**, 1933), a distinctive feature of the method of observation was the use of a mechanical hand tally and a kind of stop-watch for objectivity in the count. In later studies, length of response, independent of rate has been used in the investigations of **Loban** (1963), **O'Donnell** (1967).

Vocabulary diversity. Vocabulary measurement has been measured by a variety of methods. Cumulative records of vocabulary growth are satisfactory for the earliest stages of this aspect of language development. Beyond this initial stage, when a rapid

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and extensive increase appears, total vocabulary count is almost impossible to attain or interpret with accuracy, since the studies differ, not only in length and type of samples, but also in the criteria of measurement(s). Methods of vocabulary count differ in, for example, counting plurals, inflections of verbs and adjectives, counting root words and derivatives, and word knowledge. **McCarthy** (1954) refers to the difficulties which have contributed to the *"confused state of the literature on children's vocabulary"* (528) as the relative factor in knowing a word and the failure to define the word as a unit of measurement.

Zyze (1927) recorded conversations of third-grade children during a 15-minute story period for about three months and found that total language in use is made up of few frequently recurring words and relatively infrequent use of the great majority of words in the total vocabulary.

M.K. Smith (1941) studied the measurement of the size of general English vocabulary through the elementary grades and high school. An interesting factor in this study was the distinction that was made between size of vocabulary as reported in absolute and in relative terms. **Smith** explained, *"By absolute we mean the total number of words in one's vocabulary as estimated from a representative sampling of all the words in the dictionary. By relative we indicate the size of one's vocabulary in relation to the vocabularies of some groups of persons."* (317)

Since many of the reported studies indicate that vocabulary was selected from published wordlists, it is well to note that **Rosenzweig** and **McNeill** (1962) investigated inaccuracies in the semantic count of the **Lorge** and **Thorndike** wordlist (*The Teachers' Wordbook of 30,000 Words*). In studying the sequential additions of this volume through a comparison with the volume by **West** (A General Service List of English

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Words, 1953), it was found that while a comparison of the volumes indicated that the two publications are in general agreement concerning the frequencies of words in the semantic count, the proportion of sizable discrepancies is not negligible.

W. Johnson (1944) introduced the *"type-token-ratio"* or T.T.R. to assess the use of vocabulary or parts of speech in language expression. This represents the ratio of the number of different words (types) to the total words (tokens) in a sample of language which is considered to indicate degree of variability or flexibility of language usage. **Fairbanks** (1944) and **Chotlos** (1944) applied the T.T.R. in oral and written language studies respectively and confirmed the reliability of the measure. **Jersild** and **Ritzman** (1938) reported earlier, that there is a tendency for younger children of superior ability to use a higher proportion of different words in relation to the total number of words spoken.

Stimulus situation. The effect of the stimulus situation on both the length of response and vocabulary diversity was evidenced in a study of first-grade children's language patterns (**Strang** and **Harker,** 1965). It was found that the situation in which each language sample occurred definitely showed that the child's language patterns are influenced by the situation in which he is speaking. It was reported that the children *"used the number of words that the situation demands."* (40) The vocabulary used in context was studied and it was evident that, *"words can no longer be frozen into a static place by traditional definition; apart from its context the word has little meaning."* (40) **Menyuk** (1969) found that differing situations resulted in differing total outputs (number of sentences) for some children although there was consistency in the number of varying syntactic structures used. This appears to suggest that a count of

different words cannot be construed as meaningful vocabulary, but can constitute an objective count.

Index of measurement. The average sentence length, or average number of words in the sentence followed as the qualitative criterion of language development. The first investigator to suggest the measure of sentence length was **Nice** (1925). Mean sentence length then served as a general index of language maturity. Closer scrutiny to the contents of the sentence however, in conjunction with classification of sentence types, indicated that maturing language is often characterized by the use of transformations in which ideas are recast into subordinate clauses. These observations suggested that characteristics other than sentence length might provide a better index of language maturity and led to **Loban's** (1963) initial use of *"the communication unit,"* and **Hunt's** (1965) use of the *"T-unit,"* as indexes of language maturity. These units are similar in that each is composed of one independent clause and any associated dependent clauses. [Author's note: The following is optional inclusion in this review.]

Major Investigations

Five major studies of children's oral language will be examined to determine appropriate expectations of the oral language competency of children in the primary grades with respect to quantity, diversity, and pattern of linguistic performance.

Templin's (1966) longitudinal study was concerned with *"the identification in kindergarten of children whose articulation in second grade would be inadequate enough to warrant speech therapy."* (125) It was found that the children with many misarticulations in kindergarten *"continue to have a considerable number of them when they are in second grade."* (176) This finding was contrary to the consistent findings from cross-sectional studies which indicated that mature articulation was

achieved by seven- to eight-year-old children. The measure to study morphological change developed by **Berko** (1958) was administered to the subjects in a subsequent longitudinal study when they were in kindergarten and in first and second grade. The mean morphological scores increased for all sub-samples of the study and increased progressively for each grade. Performance on the English morphology tests in second grade by youngsters with the poorest articulation in kindergarten is quite similar to that of children selected in kindergarten as having the best articulation. The application of rules of morphological change seems to follow a pattern similar to that reported by Berko. Appropriate changes are most frequently correct when achieved by the addition of a sound, next most frequent by the addition of the syllable, and then by a vowel shift. At the beginning of the second grade the children were given the instrument developed by **Brown** and **Berko** (1960) for the study of knowledge of word usage. No relation was found in the analysis between scores on the word usage measure and either the number of misarticulations or type of misarticulations. In the earlier study by **Templin** (1957) describing the language growth of children from three to eight years of age, there was reported agreement with previous studies but differences occurred, however, in the *"increased loquacity"* of children in child-adult situations and in a tendency of children in the same age to use more mature language than they did 25 years earlier as reported by **Davis** (1937) and **McCarthy** (1930). **Templin** refers to the increased activity of children which has been observed in a variety of their behaviors. Verbalizations, she suggests, are the most likely of language measures to reflect the linguistic environment. *"The increased talkativeness found in the present study would seem to reflect an increased amount of adult language in the child's environment, whether as a result of increased viewing of TV, more inclusion in family activities, general permissiveness*

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towards the child's behavior, or other factors." (151) After the age of three the parts of speech used in both the total number of words, the verbalization, and the different words uttered, the vocabulary of use, show little change. This is in agreement with other studies and is an indication that the language of children is functioning similarly to the language of adults. At this age it appears that the structure of adult grammar has already imposed the pattern of word selection upon the children.

The studies of **Strickland** (1962) and **Loban** (1963) have made significant contributions to the study of language. The Strickland study was designed to determine the patterns of structure which appear in the oral language used by children in grades one through six and to compare these patterns with various variables including the patterns in their reading textbooks. The oral language samples were divided into phonological units which preserved the actual speech patterns produced by the children. Twenty-five phonological units were divided into patterns of fixed slots (stationary elements) and movables (elements which could appear in different locations). Subordinate elements which served as fillers for slots and movables were also identified. This system permitted a frequency count of patterns of syntax as well as analysis for syntactic structure and length of sentences and amounts and kinds of subordination. An analysis of the data revealed that *"children at all grade levels used a wide range of language patterns and that certain patterns they used with great frequency appeared to be basic building blocks of their language."* (102) Strickland concluded that the oral language children use is far more advanced than the language of the books in which they are taught to read.

Loban (1963), in a longitudinal study extending over eleven years was concerned with children's use and control of language, their effectiveness in communication, and

the relation among their oral, written, listening, and reading uses of language. Oral language samples were obtained from 338 kindergarten children in Oakland, California. Beginning with the third grade, a sample of the subject's writing was taken annually under standard conditions. The writings were classified on a five-point scale. It was this classification of subject's writing which was used for a study of its relation to achievement in reading, oral language, and other measures of the subject's use of language. The oral language ratings were based on the following criteria: amount of language, quality of vocabulary, skill and communication, organization purpose and control of language, wealth of ideas, quality of listening. For kindergarten through grades three, the first three criteria were applied. For grades four through six, all six of the criteria were used.

In the analysis of the language samples, **Loban** classified vocabulary according to diversity using the type-token ratio, the number of different words used in relation to the total number of words. This is the ratio described earlier which was used by **Johnson** (1944), **Chotlos** (1944) and **Fairbanks** (1944) as a measure of verbal diversification.

The *"communication unit"* was used as the unit of segmentation. **Loban** explains *"that the words comprising a communication unit are examples of grammatical, independent predication, or they are answers to questions which lack only the repetition of the question element to satisfy the criterion of independent predication"* (6) and in his research proved to be the grammatical independent clause with any of its modifiers. **Loban** defends his use of *"communication"* or meaning against the criticism of the linguists who urge a rigorous use of a structure alone claiming that since meaning is a double-check on the structural methodology which is actually being used *"the research has retained a closer alliance with the ultimate purpose of language."* (3)

The findings indicated that during the first seven years of schooling, children speak more words in each succeeding year of measurement with an increase in the number of communication units. It was also observed that the child with less power over language appeared to be less flexible in his thinking and *"apparently summons up all his linguistic resources merely to make a flat, dogmatic statement."* (54) The subjects who proved to have the greatest power over language were the subjects who most frequently used language to explain tentativeness (supposition, hypotheses, and conditional statements). This corresponds to **Piaget's** *"propositional"* level of thinking.

Menyuk (1969) reports the study of 150 children between the ages of three and seven years. In an effort to sample language in a *"typical"* (14) situation, speech was elicited and tape-recorded in three stimulus situations: (1) a response to a projective test, (2) conversation with adults (experimenter) generated by some of the questions in a test manual, (3) conversation with peers generated by role playing and a game about the family. **Menyuk** traced the course of development as evidence by sentences children produced and by sentences they reproduced. The <u>results</u> indicated: (1) the language of children above and below the mean IQ did not differ significantly in structure, (2) different stimulus situations resulted in different total output, but not the number of varying syntactic structures, (3) age was the only significant variable. In her general comments about the study she states, *"In an age range about 3 1/2 to about 4 1/2 years all the basic syntactic structures postulated to be used by adults are used by some children although a great deal of language development has occurred by this age period. A different kind of development is observed after this age period until age seven and probably beyond."* (18) **Templin** (1957) reported earlier that preschool

children used as complex sentence-types as those used by adults. **Menyuk's** study, is concerned with basic syntactic structures and the determination of those variables which do affect the acquisition and use of these basic structures. **Menyuk** recognized that children's reproduction of structures is limited by the rules of their grammar, found in their production, representing their grammatical competence.

Carol Chomsky (1969) has investigated the extent to which children between the ages of five and ten have achieved mastery of their native language. Chomsky questioned the assumption that the child has mastered the syntax of his native language by about age five, which she claims has caused a concentration of research dealing with the period of rapid progress and observable changes. Direct interviewing was used to elicit information about several test constructions: ask/tell, promise/tell, easy to see, prenominalizaton. (21) Chomsky found that *"active syntactic acquisition is taking place up to the age of nine and beyond."* (121) Since the rate, not the order of acquisition revealed considerable variation, the findings of this study are in agreement with earlier observations.

Language and Thought

The review of *how* the child talks is now concerned with *why* he talks to determine the child's use of language as he gains linguistic competency.

Piaget (1926) asks the question, *"What are the needs which a child can satisfy when he talks?"* (1) in *The Language and Thought of the Child*. Although much has been said of **Piaget's** study of language and thought of the child, his research has been focused on the development of thought, with the interest in language development as secondary. **Piaget** was chiefly interested in the child's language as a means of revealing his though process. Although he later acknowledged that language could

reinforce or facilitate the thought process (**Inhelder** and **Piaget** 1958). As recently as 1964, at a conference entitled *"Piaget Rediscovered"* **Piaget**, himself, said: *"Words are probably not a shortcut to a better understanding. The level of understanding seems to modify the language that is used, rather than vice versa. Mainly, language serves to translate what is already understood or else language may even present a danger if it is used to introduce an idea which is not yet acceptable."* (5)

In the relationship of language and thought, **Piaget** theorized that the development of intellectual capacity goes through a number of stages whose order is constant but whose time of appearance may vary both with the individual and with the society. Consequently, each new level of development is a new coherence, a new structuring of elements which, until that time, may not have been systematically related to each other (**Duckworth**, 1964).

The four man periods in the development of the child's thought as distinguished by Piaget and described by **Carroll** (1964) was *"mental ages"* (18) are:

1. Acquisition of perceptual invariants (to two years of age): Meanings of percepts at this stage are learned through sensory and manipulative or motor activities.

2. Pre-operational intuitive thinking (two to seven years of age): The child seeks to understand relationships among the perceptual invariants he has come to recognize.

3. Concrete operational thinking (seven to eleven years of age): Through the acquisition of concepts involving complex relationships the child has attained "reversible thinking," but his thought is bound to actual, tangible, visible materials and objects.

4. Formal propositional thinking (eleven years and up): The child can imagine possible, potential relations among the tangible objects or manipulate possible relations among absent objects.

In describing the relationship between language and thought according to **Piaget's** *"Ages and Stages,"* it has been suggested that when a child is in a particular transitional Piaget stage, increased exposure to language may well be the stimulus which *"propels the child forward."* (513) From this point of view, language is seen as facilitating thought rather than as determining thought, or cognitive behavior (**Sigel** and **Hooper**, 1968).

The characteristics of children in their *"seventh year"* which corresponds to the age of our first-grade children and bears striking resemblance to Piaget's pre-operational and concrete operational stages, are described in a recent publication from the Soviet Union (1969). With respect to language development the following statements are made:

> *The role of speech in the psychological process of the child increases. Considerable changes occur in the thought and speech of the child. His vocabulary expands, the structure of his sentences improves, and his ability to relate stories in a connected way and without skipping over details increases. ... The child begins to make more complex generalizations. He develops the ability to compare concrete objects and groups of objects and even to compare elementary concepts.* (134-135)

In the longitudinal investigation of children in kindergarten, first and second grades, **Almy** (1966) attempted to apply Piaget's theory of thought development in the field of education. The results of the Almy study were compatible with Piaget's view of

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the period of *"intuitive thought,"* prior to the age of seven years but the investigators were unsuccessful, however, in classifying the children's explanations as did Piaget. This was attributed to a lack of agreement among the judges in classifying the explanations rather than the children's failure to give explanations resembling those described by Piaget. In the more recent publications of *"Growth of Logical Thinking"* (**Inhelder** and **Piaget**, 1958), it is implied that the child's own demonstration or experimentation provides a better index to the nature of his thinking than do his verbal responses to questions. Yet, in the same volume, the authors explain first that children's understandings of an operation are not passively transmitted by language and demand an active construction on the part of the subject, and then add that although the development of the operations of seriation and classification is acknowledged to be independent of language, research has proved that language accelerates the processes and helps to complete them. The ability to use language to express logic for example, with verbal quantifies *"all and some,"* (4) is an outcome of activity and Piaget frowns upon attempts to improve the child's logic through instructing him in the use of language alone. It is, then, in this light that manipulation (direct experience) and verbalization combined develop a comprehension of terms. **Smith** (1944) in relating growth in language power to child development, referred to evidences of growth in the child's command of language in the *"circumstances in which he commonly uses it."* (52)

Bruner (1961), on the other hand, believes that *"any subject can be taught effectively in some intellectually honest form to any child at any stage of development."* (33) He emphasizes that *"a symbol system,"* (14) or a language, can greatly increase the possible range of problem-solving (**Bruner**, 1964). According to

Bruner, the symbolic representation involves translating experience into symbol systems which are used as cognitive instruments. This view of action, image, and word is similar to the succession of three stages (pre-operational, concrete operations, formal operations) suggested by Piaget. A specific example is given by Bruner (1964) in the child's use of appropriate terminology in making comparisons. He notes that a child who can use dimensional terms (wide, narrow, tall) rather than global words (big, little) indicates a higher level of cognitive development in terms of conservation ability.

Quereshi (1967) investigated the patterns of psycholinguistic development in children from two to nine years of age, using the Illinois Test of Psycholinguistic Ability (ITPA) subtests and Stanford-Binet Mental Age scores and linked the findings of this study to the problem of test construction for pre-school or elementary school children. It was advised that instruments of *"global,"* rather than *"distinct cognitive"* (363) measures of ability be used with children at these levels. These findings may have implications specific to the instructional program in language development in the primary grades as well as to evaluative procedures.

Bruner (1957) has referred to the linguistic environment in which words are introduced without *"non-linguistic reference"* (297) (**Piaget's** *"direct experience"*) in which they are said to be verbally defined. **Werner** and **Kaplan** (1950) investigated this kind of language learning in children using a Word Context Test in which artificial words are imbedded in sentences. By going from one context to another, the child is expected to arrive at the meaning of the word. Although this study was undertaken with children of reading ability, the implication is made of how effective this theory of language learning may be with children who are in the initial stages of language learning through auditory experiences only.

Piaget recognized two major types of speech in the child's language: first, egocentric speech and, second, socialized speech, and was the first to emphasize the role of egocentricity in the child's life. *"The child does not seem to know to whom he is speaking nor whether he is being listened to. He talks either for himself or for the pleasure of associating anyone who happens to be there with the activity of the moment."* (32) Socialized speech is that speech *"in which the child addresses his hearer, considers his point of view, tries to influence him or actually exchanges ideas with him."* (33)

One of the earliest observations of the language of kindergarten children following Piaget's statements on egocentricity, was made by **Rugg** (1929), who described the study as a preliminary analysis of the predominant traits of kindergarten children as revealed by their language. The techniques of the *"eyewitness analyst"* (3) to produce a verbatim account of everything the child said and did similar to that which was employed successfully by Piaget (1922) was employed as the method of observation. **Rugg's** classification of the children's remarks revealed certain outstanding traits about the kindergarten child in 1929: he is essentially a self-assertive individual; he is a linguistic experimentalist engaged in using words to become acquainted with the world around him; he reveals only slight evidences of intellectual curiosity and little interest or ability in more than the simplest forms of perceptual thinking. **Rugg** recommended two significant procedures for the elementary schools (1) *"to preserve so far as possible the developing individuality"* and (2) *"to bring the individual into a growing social consciousness."* (18) Although Rugg (1929) observed that 40.8 percent

of the remarks of kindergarten children were self-assertive supporting Piaget's conclusions on egocentricity, this could refer to socialized responses as well since self-assertive remarks could at the same time be highly socialized.

Piaget, himself, attempts to explain the differences in the results obtained by other investigators (**McCarthy** 1930, **Day** 1932, **Davis** 1937, **N.E. Smith** 1935) which do not support his theory. He suggests that a child will react over-cautiously to a standardized procedure and given an intermediary response while a more flexible type of questioning would reveal that these responses did not entirely satisfy him and that he is capable of going a little further (**Almy**, 1966). **Piaget**, therefore, attributes the difference between two sets of results to the difference in method.

Isaacs (1966) in placing emphasis on language development stated, *"I find it hard to believe that it can be seriously suggested by anyone* (**Piaget's**, theory of egocentricity) *that true interchange of opinion does not occur with children under seven or eight years."* (74) **Loban** (1963) found that the desire to communicate successfully with another person was the best motivation for language control and the development of proficiency.

Vygotsky (1962) differs with Piaget on the interpretation and significance of egocentric speech. He claims that in his experiments, egocentric speech is related to social speech and represents a transition from speech for others to inner speech for oneself which, he claims, serves logical thinking. In the explanation of the genetic roots of thoughts and speech, Vygotsky theorizes that the developmental course of intellect differs from the developmental course of speech in that thought initially is non-verbal and speech initially is non-intellectual. At a given point, when the two lines meet, each thing assumes a *"name"* and **Buhler** studied the development of the *"naming"* process.

and Vygotsky concluded from their findings that the child associates the attributes of an object with the word assigned to the object and when asked for an explanation of an object, will tell what the object can do or what can be done with it.

An evaluation of children's language based on language production in response to stimuli/suggests that the relationship between language and learning be examined in the literature on language and thought. The role of words or vocabulary in concept development has been described in many ways. It has been pointed out by **Vinacke** (1955) particularly the words facilitate organizations of experience inside the individual by providing labels or systems of that experience. *"Words are merely the names of concept systems. The words serve as evokers of concept if the concepts are there to be evoked."* (512)

On the other hand, **Langer** (1967 suggests that when concepts are developed through direct experiences and the labels for those experiences and the relationships are provided the difficulty is lessened. To **Carroll** (1964), the connection between a word and the concept or experience with which it stands in relation must work in either direction: *"the word must evoke the concept and the concept must evoke the word."* (186)

Weir and **Stevenson** (1955) investigated the effect of verbalization in children's learning as a function of chronological age in a study of children of three to nine years. It was found that there was more rapid learning at all age levels when instructions to verbalize were given, demonstrating that *"verbalization concerning the stimuli aids learning."* (147) **Carroll** (1964) attributes the difficulty of learning school concepts to the deductive procedure of verbal explanation. He explains that labeling without

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adequate explanation can lead to concept development in which irrelevant rather than relevant attributes or characteristics are assigned to the object or situation that it labels.

The function of language in relation to thought has been investigated through the studies of labeling in learning. Representative studies have been selected for summary. **Katz** (1963) tested the hypothesis that the nature of verbal labels associated with stimuli influences the perception of those stimuli. It was found that children in first, second, and fourth grades, who learned distinctive labels exhibited lesser difficulty in learning to discriminate between two stimuli. Common labels were less effective. These findings relate to **Whorf's** (1956) principle of the linguistic determinism of perception as well as to **Piaget's** (1951) work on nominal realism suggesting the role of labeling in the discriminal processes of young children.

Wittrock and Keislar (1965) tested three types of verbal cues with second- and third-grade children in the transfer of concept and found *"direction toward concept names to be an effective way to obtain learning, retention, and transfer within the previously learned concepts whether the concepts are learned during an experiment or whether they have been pre-experimentally learned."* (20).

Stern (1965) however, found the concept-label (common concept) rehearsal experience more effective than the instance-label (more specific) rehearsal in the transfer of learning of kindergarten and first-grade children. In this role, language is used to promote generalization or in a mediating function. It was concluded that this investigation *"provided additional support for the value of verbal labels in problem solving."* (240) The common concept or concept label for a class for example, *"Bird," was tested with the instances of the class, or "Robin."*

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Stern and Keislar (1967) investigated the acquisition of problem-solving strategies by young children through the use of verbal mediators by third-grade children and found significantly positive correlation between mental age and the acquisition of the more difficult problem-solving strategy. It was suggested that the difference may be due to the age-related differences in the ability to handle language. This raises the question of whether in Piagetian theory, the thinking process, rather than the language was *"age-related"* or according to **Carroll** (1964) concepts were labeled though not explained adequately.

In an explanation of the mediation theory of learning, **Menyuk** (1969) states that first associations of single words appear through simple S-R laws (stimulus-response), but, as utterances increase in length these laws can no longer account for what is produced and understood. At this stage, the class formation process begins. For example, when the child observes that A-B-C and A-B-D occur, he learns that C and D are members of the same class. It can be assumed then, since a class includes many instances, associations may be formed between any of the instances. This can be related to the use of verbal cues in concept development or the effect of miscues when incorrect associations are made.

In a study by **Wicklund, Palermo** and **Jenkins** (1964), it was found that the paired-associate learning of children is a direct function of associative strength. This was supported in a study by **Goulet** and **Grimm** (1967) in which the strength of association was tested through different types of language practice in affecting transfer of training.

In a study of false recognition of words by third- and sixth-grade children conducted by **Felzen** and **Anisfeld** (1969), semantic and phonetic relations were used in

producing false recognition errors. The results were consistent with earlier development experiments (**Anisfeld** and **Knapp**, 1968) in demonstrating an age gradient with respect to the semantic and phonetic relations. *"The lesser effectiveness of the semantic relations in producing false recognition errors in the third-grade children than in the sixth-grade children suggests that at the younger ages the semantic features for interrelating vocabulary items are not yet as prominent as the superficial phonetic features."* (11) These studies on false recognition may have implications for a child's production of oral and written language as well as "*miscues*" in reading which have been observed by **Goodman** (1963).

Watts (1944) distinguished between the traditional and the modern view of language and thought. The traditional view is that *"thought and language are distinct activities"* (18) with thought occurring first in the mind of the thinker and after in the words he uses to express it. The modern view, acknowledges *"simultaneous thinking and speaking."* (19) Since language has been called *"the shaper of ideas"* (**Whorf**, 1940) and *"simple exposure to speech will not shape anyone's mind"* (461) (**Brown** and **Lenneberg**, 1954), it seems that studies of the function of language in learning assume a commonality of meaning between the experimenter and the subject. On the other hand, *unless confidence is established in the standard of communication the factor of semantics reflecting the character of the reality* (**Hayakawa**, 1952) *appears to be a significant variable.* Still another factor to consider in studies of language and learning is the effect of verbal context (**Pollack**, 1963) or familiarity of association apart form meaning (**Miller** and **Selfridge**, 1950).

Language and Behavior

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Another function of language is the principle of reinforcement. Even subtle reinforcers in verbal conditioning can affect the response to a specific stimulus, therefore verbal conditioning is considered an effective available technique for the rapid manipulation of verbal behavior (**Waetjen**, 1962). From this point of view, quantitative as well as qualitative measures of children's language may well be affected in a given situation particularly and in language performance generally.

In another context, it has been observed that a preschool child who uses language willingly may reflect a positive self-concept, while at the primary level, daily classroom situations can disclose clues to a child's perception of his environment (**Pugmire**, 1966).

A function of language in the development of personality has been recognized and this relatedness **Petty** (1967) suggests must be considered in teaching.

In studies by **Barry** (1950) and **Sanford** (1942) it was found that personality is reflected in the manner of speaking as well as in the content of the speech.

Scheidel, Cowell, and **Shepherd** (1958) studied the relationships between personality traits and discussion behavior and found *"notable relationships between such personal characteristics as self confidence, independence and dominance, and what is described as 'the individual prominence' in discussion behavior."* (266)

Rosenthal (1956) determined relationships between sociometric status and language behavior of children in second grade and found that the language of children of high sociometric status is more active, variable, and communicative. It was also found that children of this age group (second grade) of approximately *"normal"* IQ tended to be equally talkative regardless of sociometric status. The suggestions here are that personality factors which may affect the child's preschool language growth may also determine his performance in first grade, and too, the influences during the span of first

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through third-grade may likely affect his language behavior in terms of language production.

An interesting observation has been made by **L'Abate** (168) with respect to psycho-diagnosis of children. He states that the expressive aspects of functioning have been overemphasized without paying attention to what information a child receives. The child is, therefore, judged only in terms of what he says or does. His model is designed to derive the following: (1) in most normal children reception is always greater than, or at least equal to, expression; (2) if audition is "greater" than vision than speech is greater than manual manipulation; (3) by the same token, if vision is greater than audition, manual manipulation is greater than speech. **L'Abate** suggests that the ultimate test of the usefulness of the model will likely be in its application to rehabilitation, since it indicates a greater degree of differentiation in procedures that has been possible traditionally. This may provide for evaluation of language as it is used in thought processes through nonverbal performance.

Another procedure of assessing language behavior of young children, *"the standard telephone interview"* (**Gotkin**, et al., 1964) has been reported as an effective technique in discriminating between groups of children using only gross measures. The authors suggest that the telephone interview has significance for education not only as a research instrument but also as a potential teaching innovation, particularly for the socially disadvantaged child since it is an intrinsically motivating technique for most children. This instrument should also reveal information about the relationship between the child's use of oral language and his behavior.

In summary, the thrust of the interest by educational researchers and practitioners in the language development of the elementary school child during the decades of major

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instructional change, and the emerging knowledge of the language of both the preschool and school child, contributed to an efficient relationship between language instruction and language behavior. The influence of linguistics and increasing recognition of the importance of language for educational growth continue to stimulate interest in language development and the implication of changing needs.

The primacy of oral language can be considered in its relationship to written language and will be included in subsequent literature reviews.

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